

NAVAL POSTGRADUATE SCHOOL

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THESIS



A COST/BENEFIT ANALYSIS OF THE SUPPLY MANAGEMENT ASSESSMENT PROGRAM

by

Craig H. Nostrant

June 1989

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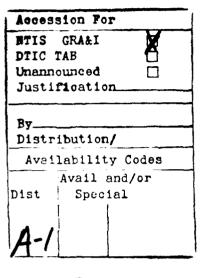
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#19 - ABSTRACT - (CONTINUED)

Based on evaluation of the research data, recommendations are presented for further enhancements to the Supply Management Assessment.





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A Cost/Benefit Analysis of the Supply Management Assessment Program

by

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ABSTRACT

This thesis examines some of the effects of implementing the Supply Management Assessment (SMA) program within the Surface Force, U.S. Pacific Fleet.

Data were gathered from a survey, interviews and analysis of Supply Management Assessment reports. The implementation of the Supply Management Assessment by the Commander, Naval Surface Force, U.S. Pacific Fleet resulted in an overall positive influence on afloat supply management and combat sustainability, particularly in the areas of inventory and configuration management. Research results indicate that benefits derived from enhanced financial and supply management operations, which are a direct result of SMA implementation, outweigh the costs of the new program.

Because of the potential for improvement in effectiveness of afloat operations, the Supply Management Assessment program should be presented to other type commanders and fleet commanders for evaluation and possible adoption.

Based on evaluation of the research data, recommendations are presented for further enhancements to the Supply Management Assessment.

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I. <u>INTRODUCTION</u>

The focus of this thesis is on the benefits and costs of implementing the Supply Management Assessment. The Supply Management Assessment is designed to replace the Supply Management Inspection, which evaluates how effectively each ship conducts its supply management function. This topic is a concern of Commander, Naval Surface Force, U.S. Pacific Fleet.

The study prescribed here assesses the financial implications of the transition from the Supply Management Inspection (SMI) program to the Supply Management Assessment (SMA) program within the Naval Surface Force, U.S. Pacific Fleet. If the new Supply Management Assessment program has resulted in enhanced afloat supply support, with a simultaneous reduction in total costs of that support, then SMA achievements should be identified and made available to other type commanders in a coordinated effort to improve total resource utilization elsewhere in the Navy.

A. BACKGROUND

1. Supply Management Inspection (SMI)

a. SMI Mandate

Supply Management Inspections are mandated by the Commander, Naval Supply Systems Command [Ref. 1] and the rules governing their conduct are specified by the Chief of

Naval Operations. [Ref. 2] Fleet and type commanders issue instructions, specific guidance on the inspection to the ships and to the SMI teams, and inspection guidelists.

In the Surface Force, U.S. Pacific Fleet (SURFPAC) the type commander, Commander, Naval Surface Force, U.S. Pacific Fleet (COMNAVSURFPAC), maintains a central inspection team homeported in San Diego, California. Additionally, there are four secondary teams under the direct command of four of the eight Surface Pacific Fleet Group Commanders. These five teams previously conducted Supply Management Inspections and all necessary reinspections on each ship assigned to COMNAVSURFPAC during every 18 month competitive cycle.

b. SMI Panel Formation

For several years, the SMI teams were consistently reporting significant afloat supply management problems. Additionally, these and other deficiencies had been noted over years of operations relative to the control and use of shipboard stocks of material, appropriated funds, equipment support and other supply management items critical to the Navy's combat sustainability. In early 1987, several large scale unauthorized supply support activities and associated investigations (e.g., the transfer of F-14 aircraft parts to a non-allied country and supply accountability problems aboard an aircraft carrier) were creating major concern among Navy's leadership. As a

result, on 12 March 1987, VADM G.W. Davis, Commander, Naval Surface Force, U.S. Pacific Fleet (COMNAVSURFPAC) tasked RADM F.A.K. Taylor, Commander, Cruiser-Destroyer Group ONE (CCDG ONE) to examine all aspects of the currently installed Supply Management Inspection. [Ref. 3] A blue ribbon panel was established and charged with conducting the examination and making recommendations to overcome the causes of supply management problems.

c. SMI Panel Research

The panel began meeting in mid-April 1987 as a single team. It was subsequently divided into three research groups, each with its own areas of responsibility to analyze. The three topic areas reviewed were: The Supply Management Inspection, configuration control, and training, manning and automation utilization. The topic areas outside of the SMI itself were chosen as representative of the most common causes of afloat supply management problems as identified by SMI teams. The research groups conducted surveys aboard 20 surface ships and visited or obtained information over the phone from ten shore commands that are primarily responsible for supporting the fleet in the panel's research topic areas.

d. SMI Panel Composition

Members of the SMI Blue Ribbon Panel headed by RADM P.A.K. Taylor were chosen for their experience, expertise and background in afloat supply management. Full

representation from shore support facilities, afloat staff and ships personnel was obtained. The personnel assigned to the panel are listed below:

SMI Review Team

CAPT R.S. Watkins

CAPT D.R. Hess

CO USS GRIDLEY

LCDR H. Ornelas

Head of SMI Team (D)

LCDR B.J. Acton

Head of SMI Team (R)

Configuration Control Review Team

CAPT J.J. Hogan

CDR P.A. Long

CDR R.D. Wilson

LCDR B. Roper

LCDR M.L. Karl

LCDR G. Shutelock

LT C.K. Stevens

CO USS JASON

CO USS DAVID R RAY

COUSS DAVID R RAY

COMCRUDESGRU 1 Staff

COMNAVSURFPAC Staff

COMNAVSURFPAC Staff

SO USS DAVID R RAY

Training, Manning and Automation Review Team

CAPT T.L. Blackmon
CAPT R.A. Conder
SWOCOLCOM Coronado
CAPT K.W. Libby
Force Supply Officer
CDR S.G. Smith
CO USS CHANDLER
CDR J. Stewart
COMNAVSURFPAC Staff
LT F.M. Beall
SWOCOLCOM Coronado
LT D. Grove
COMNAVSURFPAC Staff

e. SMI Panel Report

The SMI Blue Ribbon Panel reported its findings on 5 June 1987. [Ref. 4] The panel's report stated that the Supply Management Inspection teams were adequately inspecting and reporting on the specific areas they were tasked to inspect. However, the panel members felt that the SMI process itself was not sufficiently comprehensive. [Ref. 5] The panel listed four major findings, eight major

problem areas or issues, and well over 200 recommendations on methods to improve the afloat supply management program.

One of the panel's four major findings dealt directly with the SMI process and reported that "These (supply management problems) areas are not being effectively highlighted or addressed by the current SMI and SMI follow up process." [Ref. 4] One of the eight major issues identified by the SMI panel was the need to modernize and restructure the SMI. Twenty-two of the recommendations made by the panel dealt with proposed changes to the SMI. [Ref. 4]

2. Supply Management Assessment (SMA)

Starting in July 1987, the recommendations from the blue ribbon panel were incrementally incorporated with inspection changes desired by the force supply officer and the heads of the Supply Management Inspection teams to create a new review process; The Supply Management Assessment (SMA). The Supply Management Assessment evolved from the Supply Management Inspection process over the next several months. In January 1988, the Commander, Naval Surface Force, U.S. Pacific Fleet promulgated the Supply Management Assessment as the official vehicle for evaluating afloat supply management in SURFPAC. [Ref. 6] The changes to the Supply Management Inspection that lead to the creation of the Supply Management Assessment are summarized below.

a. Restructuring of the SMI Format

The functional areas or sections of the old SMI were either changed, re-formatted or deleted. New sections were then developed and combined with the altered portions from the SMI to create the broad outline of the SMA. The functional areas, or sections of the SMI and SMA, are listed below:

SMI Functional Areas

Organization, Administration and Training Supply Support Supply Accounting Food Service Ship's Store

SMA Functional Areas

Level of Knowledge Sustainability Accountability Crew Support

b. Built-in Flexibility

The SMA teams were given the flexibility to deviate from the Supply Management Assessment guidelist and inspect whatever problem areas or potential problem areas were deemed necessary in order to provide a more meaningful review of a ship's supply management program. [Ref. 6] Under the Supply Management Inspection, the SMI team was required to follow the SMI guidelist step by step and could not deviate from the areas covered by the guidelist.

c. Assessment of Ship-wide Inventory Stocking Procedures

The SMA teams began to assess inventory stocking procedures and policies throughout the ship, instead of just in the Supply Department, as had been the case with the SMI. This expanded review includes physical inventories, storage

security, and inventory control systems of the following types of materials stored outside of Supply Department spaces: ready service spares (RSS), maintenance assistance modules (MAMS), excess spare parts (ESP), special tools, etc.

d. Short Notice Scheduling

The SMA team began conducting assessments on short notice (48 hours), with a level load of assessments throughout the competitive cycle. Supply Management Inspections were scheduled approximately 18 months after the last inspection and were announced almost one month ahead of time. The lack of surprise gave ships' personnel the opportunity to correct or minimize errors, thereby affecting the inspector's ability to adequately assess the effectiveness of the afloat supply management function.

e. Alteration of the SMA Report

The report issued after each assessment was changed to be more descriptive and narrative than the rigid pre-set word processor format of the old SMI report that listed each and every discrepancy noted during the inspection. The SMA reports are prepared on board during the assessment. A copy is presented to the Commanding Officer at the time of the command debrief and the original is mailed to the inspected ship's Squadron Commander. Under SMI procedures, the inspection report was forwarded to the

inspected ship's Squadron Commander for review approximately four weeks after the inspection debrief.

f. Restructuring of the Grading Criteria

The old SMI evaluation system was replaced with a more subjective grading criterion. This new grading system allows the inspectors some flexibility in assigning functional area adjective grades (e.g., outstanding, excellent, good, marginal or fail) by recognizing severity differences in discrepancies and by permitting credit to be given to ships for recognizing problems and initiating corrective actions.

- g. Increased SMA Senior Inspector Authority

 The SMA senior inspector was given the authority
 to waive or augment portions of the inspection without
 obtaining COMNAVSURFPAC approval.
 - h. Increased Consolidated Shipboard Allowance List (COSAL) Equipment Support Review

The SMA team began comparing shipboard equipment with its allowance support documents and authorized stocking levels. This comparison will determine to what extent actual repair part on-board stockage supports on-board combat systems sustainability. The SMI checked only to see if the Supply Department was posting the monthly COSAL updates into all of the sections of the COSAL.

 Assessment of Supply Management Level of Knowledge

The SMA teams began to evaluate the ship-wide level of knowledge relative to supply management and relate deficiencies in that area to the ship's supply management problems.

j. Assessment of Automation Utilization

The SMA teams expanded the supply management assessment to include a review of how effectively each ship was utilizing their Shipboard Non-Tactical Automated Data Processing (SNAP) I or II systems. SNAP I and II computer systems are automating and replacing manual record keeping methods.

k. Increased SMA Fleet Feedback

The SMA team was tasked to start a newsletter providing the fleet with lessons learned from inspections, potential pitfalls and common afloat problem areas as a tool and a training aid to be used by the fleet to avoid repeating discrepancies.

1. Expanded Operating Target (OPTAR) Utilization Review

The SMA team expanded, in both depth and range, the evaluation of the requisition follow-up program, the material obligation validation (MOV) program, ship-wide budgeting, and Aged Unfilled Order Listing (AUOL) and Summary Filled Order and Expenditure Listing (SFOEDL) reconciliation processing.

B. OBJECTIVE

The primary objective of this thesis is to identify and evaluate the financial implications (benefits and costs) and the areas of enhanced supply support associated with implementing the Supply Management Assessment program.

The secondary objective is to identify additional changes to the Supply Management Assessment that may be appropriate for further improving afloat supply management.

C. RESEARCH QUESTIONS

1. Primary Research Question

Were resource savings realized in afloat supply management by the transition from the Supply Management Inspection to the Supply Management Assessment?

2. Ancillary Research Questions

What kinds of improvements/savings/costs are evidenced?

What percentage of the afloat units evidenced improvements/savings and or costs?

D. SCOPE

The main purpose of the thesis is to evaluate areas of improvements, savings and costs to afloat supply management that have resulted from the transition of the Supply Management Inspection to the Supply Management Assessment. The changes in afloat supply management on DD-963 and FFG-7 class ships as viewed by the Supply Management Assessment

Team and Commanding Officer and Supply Officer of each ship will be analyzed to determine the financial impact (positive or negative) on afloat supply management and supply support caused by changes in the oversight/review mechanism. DD-963 and FFG-7 class ships have been chosen as the ship classes which are representative of surface forces.

E. METHODOLOGY

Survey response data gathered from a sample of 16 DD-963 and FFG-7 class ships in SURFPAC were used to determine the fiscal impact caused by the implementation of the Supply Management Assessment on each ship as viewed by the Commanding Officer and Supply Officer. The survey was used to ascertain enhancements to the Supply Management Assessment that should be incorporated into the process and to determine the resulting benefits and/or costs from those changes.

The detailed results from completed Supply Management Assessments as reported in SMA reports for each DD-963 and FFG-7 ship were analyzed along with interviews of the Supply Management Assessment team to determine the benefits and costs of the transition to the SMA as viewed by the type commander.

The COMNAVSURFPAC survey used in this thesis is presented in Appendix A.

F. ORGANIZATION OF THESIS

The thesis is divided into three chapters. Chapter I provides an introduction to the Supply Management Inspection and to the Supply Management Assessment. Chapter I also contains background information, the thesis objective, research questions, research methodology and thesis organization.

Chapter II contains the raw data gathered from the Supply Management Assessment Reports, surveys and interviews along with an analysis of the research data.

Chapter III provides the conclusions drawn from the data analysis presented in Chapter II and presents recommendations for improvements in the SMA process.

II. PRESENTATION AND ANALYSIS OF THE DATA

A. DATA SOURCES

Data for this thesis were obtained from surveys, interviews and analysis of SMA reports. DD-963 and FFG-7 class ships were chosen as a sample that is representative of the Surface Forces, U.S. Pacific Fleet. The ships involved in collecting the survey and SMA report data are indicated in Table 1.

Some ships were not sent surveys because they had yet to undergo a Supply Management Assessment and were not projected to receive an assessment in time to participate in this study. A few other ships were not included in the sampling because their schedules would have precluded their receiving and responding to the survey in a timely fashion. The designation "NA" indicates that the ship has not yet received a SMA or was excluded from the survey sampling.

In addition to the survey and SMA reports, interview data were obtained from the SMA team officers.

B. SURVEY RESPONSE DATA

Surveys were distributed to selected DD-963 and FFG-7 class ships in SURFFAC. Of the 31 surveys submitted to the ships, 21 surveys were completed and returned, for a gross response rate of 68 percent. Five responses were eliminated since the responding ships had not yet had a Supply

TABLE 1
PARTICIPATING SHIPS

	SHIP	SURVEY SENT	SURVEY <u>RESPONSE</u>	SMA <u>REPORT</u>
USS	WADSWORTH (FFG-9)	Y	Y	Y
USS	DUNCAN (FFG-10)	Y	Y	Ÿ
USS	GEORGE PHILIP (FFG-12)	Y	Y	Y
	SIDES (FFG-14)	Y	NA	NA
USS	JOHN A MOORE (FFG-19)	Y	Y	Y
USS	LEWIS B PULLER (FFG-23)	Y	Y	Y
	COPELAND (FFG-25)	Y	Y	Ÿ
USS	MAHLON S TISDALE (FFG-27)	Y	N	Y
USS	REID (FFG-30)	Y	NA	NA
USS	JARRETT (FFG-33)	Y	Y	Y
USS	CROMMELIN (FFG-37)	Y	N	Y
USS	CURTS (FFG-38)	N	NA	Y
USS	MCCLUSKY (FFG-41)	Y	N	Y
		Y	Y	Y
USS	THACH (FFG-43) RENTZ (FFG-46) VANDEGRIFT (FFG-48)	Y	Y	Y
USS	VANDEGRIFT (FFG-48)	Y	NA	NA
USS	GARY (FFG-51)	Y	Y	Y
USS	FORD (FFG-54)	Y	Y	Y
USS	REUBEN JAMES (FFG-57)	Y	N	N
	RODNEY M DAVIS (FFG-60)	N	NA	Y
	PAUL F FOSTER (DD-964)	Y	Y	Y
	KINKAID (DD-965)	Y	N	Y
	HEWITT (DD-966)	Y	NA	NA
USS	ELLIOT (DD-967)	Y	NA	NA
USS	DAVID R RAY (DD-971)	Y	N	Y
055	OLDENDORF (DD-972)	N	NA	Y
	JOHN YOUNG (DD-973)	Y	N	Y
	O'BRIEN (DD-975)	Y	Y	Y
		Y	Y	Y
USS	LEFTWICH (DD-984)	Y	Y	Y
USS	CUSHING (DD-985)	Y	N	Y
USS	CUSHING (DD-985) HARRY W HILL (DD-986) INGERSOLL (DD-990) FIFE (DD-991)	Y	Y	Y
USS	INGERSOLL (DD-990)	Y	N	Y
USS	FIFE (DD-991)	N	NA	NA
USS	FLETCHER (DD-992)	Y	N	Y

LEGEND: Y = Yes N = No NA = Not Applicable

Management Assessment. This yielded 16 ships, with a net response rate of 52 percent. These form the basis for the survey data analyzed.

The survey questions and associated response data are presented in the pages that follow.

QUESTION ONE:

The first survey question was designed to provide data with respect to whether the ship experienced any increased costs and or realized savings due to the transition to the SMA.

Have you realized any <u>resource savings</u> and/or <u>increased costs</u> (based on such items as OPTAR obligation rates, personnel time commitments, usage/stocking levels, inventory control of ESP/SRI/OSI/MAMS/RSS, paperwork/personnel time savings from the elimination of OAT&D, etc.), which can be attributed directly to the Supply Management Assessment program?

SURVEY RESPONSES FOR QUESTION ONE WERE:

The vast majority of responses (81 percent) indicated that there were no increased costs incurred as a result of the transition to the SMA program. Only 19 percent of the respondents claimed a loss of resources.

A significant percentage of the respondents (44 percent) did indicate some resource savings, while (56 percent) reflected no resource savings due to the transition.

By a more than a two to one (44-19 percent) margin, the respondents indicated that they experienced savings over costs.

QUESTION TWO:

Those respondents who did indicate a change in their financial status in question one were asked in the second question to specify the type, the amount and the time frame or frequency of the savings and or costs they experienced.

If you experienced either savings and/or costs, specify the type (e.g., dollars, time, inventory, etc.), approximate amounts of savings and/or costs and time frame (e.g., continuing, one time, occasional, etc.) that you are able to identify.

SAVINGS COSTS
Type Amount Time frame Type Amount Time frame

SURVEY RESPONSES FOR QUESTION TWO WERE:

Savings

Number of responses	Туре	Amount	Time Frame
5 1 1	Time Dollars Dollars	unknown \$700,000 \$34,000	continuing one time continuing
Costs			
Number of Responses	Туре	Amount	Time Frame
3	Time	unknown	continuing

All of the respondents that reflected time as either a resource gain and or loss indicated that it was not possible to document the exact number of manhours affected by the transition to the SMA. Thirty-one percent of the respondents indicated manhour savings while 19 percent

indicated increased manhour requirements due to the Supply Management Assessment. Two of the responses that reflected increased manhour requirements also showed an off setting reduction in manhour requirements in other areas. Those ships that reflected increased manhour usage indicated that the increase occurred during the Supply Management Assessment as line personnel participated in the SMA. The ships that indicated manhour savings, realized the personnel gain in everyday activities (e.g., inventorying parts, ordering supplies, conducting maintenance, etc.). The manhour savings were experienced in all departments, shipwide.

The ships that reflected dollar savings were able to provide exact figures. In the case of the \$700,000 savings, the SMA team had expanded the scope of the assessment and located missing repair parts in the storeroom and in work spaces throughout the ship that had been misplaced or incorrectly classified as storeroom items when they were actually ready service spares (RSS) and maintenance assistance modules (MAMS). The location and/or clarification of the status of these parts allowed the ship to post them to the stock record file and nullify supposed shortages that the ship would have ordered. The SMA helped another ship improve their requisitioning and storage procedures in a fashion that reduced the Operating Target (OPTAR) expenditure rate in a continuing manner by \$34,000 a year.

QUESTION THREE:

The third question was designed to determine what division or department realized the savings and or incurred the costs identified in the previous question.

In which <u>department or division</u> did these changes occur (e.g., engineering, combat systems, ships store, food service, etc.)?

SAVINGS

COSTS

SURVEY RESPONSES TO QUESTION THREE WERE:

Savings

Number of Responses	Туре	Department
2 5	Dollars Time	Combat Systems, Engineering All Departments
<u>Costs</u>		
Number of Responses	Туре	Department
3	Time	All Departments

Those respondents indicating that they had realized dollar savings, experienced the savings in departments other than the Supply Department. The dollar savings were spread evenly between the engineering and combat systems departments.

The ships that reflected a manhour loss indicated that the loss occurred in departments other than the Supply Department. However, those departments also received more than an off setting gain in manhours as their daily

operations became more efficient. The savings and loss of manhours was incurred evenly by all line departments.

The Supply Department was noted as having realized some manhour savings resulting from the reduction in administrative paperwork requirements. The largest single reduction in paperwork by the SMA was the elimination of the instructions and letters of authority portion of the SMI. The total manhour savings was experienced evenly by all departments on the five ships reflecting the gain.

QUESTION FOUR:

The fourth question attempted to gather data to indicate if an improvement and or degradation had occurred to supply support from the transition to the SMA, and if so, in what areas.

Did you realize any significant <u>improvement or</u> <u>degradation to supply support</u> that resulted from the Supply Management Assessment? If so, in what areas (e.g., better overall management, improved stock control of RSS/ESP, etc.)?

IMPROVEMENT	Yes	<u>DEGRADATION</u> Ves No			No	_
AREA:			AREA:			

SURVEY RESPONSES TO QUESTION FOUR WERE:

<u>Improvement</u> Yes = 15 88% <u>Degradation</u> Yes = 0 0% No = 1 12% No = 16 100%

Almost all (88 percent) of the respondents indicated an improvement to their supply support posture. Only 12 percent of the ships responding to the survey indicated that they did not realize any improvement to their supply support operation. Most respondents reflected more than one area of improvement. None of the respondents reflected a degradation to their supply support operation.

The supply support areas that experienced improvement and the number of ships that indicated that enhancement are indicated below:

Supply Support Areas of Improvement	Number of Ships Indicating Benefits	Percentage
Inventory Management	13	81
Training/Level of		
Knowledge	7	44
Fiscal Management	6	38
Configuration		
Management	4	25
Crew Service or		
Support	2	13
FF	-	± -

The supply support areas that experienced improvement and the frequency that each area reflected that benefit are indicated below:

5	Supply Support Areas of Improvement	Number of Benefit Responses	Percentage
	Inventory Management Training/Level of	23	51
•	Knowledge	7	16
	Fiscal Management Configuration	6	13
(Management Crew Service or	6	13
	Support	3	7

Inventory management areas (e.g., RSS, MAMS, ESP, storeroom stock control, etc.) were grouped together into a single category. Fiscal management areas (e.g., MOV, OPTAR, difference listing processing, etc.) were also grouped together into a single category. Additionally, configuration management areas (e.g., COSAL maintenance, equipment to allowance parts list (APL) validation, etc.) were grouped together. Combining management topics into groups focuses the improvements into more readily identifiable areas.

QUESTION FIVE:

The fifth and last survey question was designed to determine what additional changes should be made to the SMA. Only eight of the respondents (50 percent) chose to answer question number five. Some ships provided more than one recommendation.

What areas of the Supply Management Assessment itself do you feel could be improved and in what ways? What would the benefits relative to the costs be?

AREA

SUGGESTED IMPROVEMENT

BENEFITS/COSTS

SURVEY RESPONSES TO QUESTION FIVE ARE LISTED IN TABLE 2:

C. SUPPLY MANAGEMENT ASSESSMENT REPORTS

Twenty-eight SMA reports provided by the COMNAVSURFPAC SMA team were reviewed. Several factors hindered the review of the reports. First, the language in the reports was frequently vague when describing discrepancies (e.g., terms like several, many, numerous, etc., were used instead of specific numbers). Second, when an expanded (range and depth) assessment (allowed by the SMA program in problem areas) was conducted, especially in financial management areas, the findings from the expanded review were not separated from the results of the normal inspection.

TABLE 2
SUGGESTED SUPPLY MANAGEMENT ASSESSMENT IMPROVEMENTS

Number of Responses	Suggested Improvement	Benefit/costs
3	Automatic assist visit prior to end of over-hauls.	Identify overhaul related discrepancies while overhaul funding is still available for corrective action.
2	Combined SMA/Navy Food Management Team assist visits prior to SMA inspection.	Problem areas are identified early and consolidates training.
1	Automatic assist visit one month prior to assessment.	Ensure ship is ready for assessment.
1	Add formal leadership training for senior MS.	Improve food service and accountability.
1	Add and verify division officer, chief petty officer (CPO) and work center (WC) supervisor supply support training to SMA requirements.	Improve afloat configuration management.
1	Include light airborne multi-purpose system (LAMPS) review.	Improve afloat LAMPS support posture.
1	SMA and Fleet Account- ing and Disbursing Center (FAADC) conduct joint financial review.	Ensure ship records are in synchronization with FAADC financial listings. This would minimize difference listing processing.
1	Establish firm goals and standards for supply center service market (Servmart) portion of SMA.	This would reduce manhours spent on Servmart paperwork, and allow personnel to allocate time on more productive areas.

Without separate identification of findings from the expanded assessment, credit for the discoveries of discrepancies can not definitively be attributed to the SMA.

1. Report Data

The SMA reports revealed no signs of increased cost or degradation in supply support due to the SMA. This was anticipated since the SMA reports specifically indicate how well the inspected ship's supply management function was performed, concentrating on identifying the problems themselves. If time permits during the assessment, the SMA will attempt to identify underlying causes of problems. There were no indications in any of the assessment reports of the SMA being the cause of a problem.

Four of the 28 reports, or 14 percent, indicated no increased benefit from the transition to the SMA other than noting that a wider range and depth of items had been verified.

The remaining 24 out of 28 reports, or 86 percent, did indicate a benefit from the transition to the SMA.

These reports indicated a wide range of findings that would not have been discovered by the SMI. Those findings are reflected below by management category.

a. Inventory Management

(1) Excess Spare Parts (ESP).

N	umber of Ships	Amount Identified
	1	\$21,000
	1	6,360
	1	9,560
	1	13,496
	1	7,000
	<u>1</u>	5,500
Total	6	\$62,926

Six of the 28 reports, or 21 percent, specifically indicated dollar savings the ships will realize by either turning-in to the supply system or placing in stock, those excess items found in the work spaces from the excess spare parts (ESP) program review. Additionally, 16 mandatory turn-in repairable and depot level repairable (MTR/DLR) items were found on two other ships, but were not priced in the SMA reports. A total of eight of the 28 reports, or 30 percent, of the assessed ships experienced significant resource savings from the ESP portion of the SMA. The total identifiable savings from the ESP review portion of the SMA was significantly in excess of \$62,926.

(2) <u>Maintenance Assistance Modules (MAMS) and</u> Ready Service Spares (RSS).

Num	ber of Ships	Amount Identified
	1	\$46,726
	<u>1</u>	10,782
Total	2	\$57.508

Specific dollar amounts for excess RSS/MAMS found in work spaces were indicated in two of the 28

reports. In four other reports shortages or excess of RSS/MAMS in work spaces were numerically identified (a total of 51 repair parts), but were not priced. In six other reports, reference was made to shortages/overages, but not numerically or financially specified. Therefore, in 12 of the 28 reports (43 percent), excesses and/or shortages of RSS/MAMS material were discovered. Excess RSS/MAMS can be turned-in for financial credit to the type commander and/or used to fill shortages on other ships. Shortages of RSS/MAMS could greatly reduce combat sustainability and lengthen repair and maintenance time frames for critical electronic systems. The total identifiable fiscal savings was significantly in excess of \$57,508.

Non-fiscal improvements were made to 13 (46 percent) of the assessed ship's MAMS/RSS programs by correcting allowance listings, cross reference lists and the maintenance assistance modules and ready service spares part (parts CF and CR) of the COSAL. These improvements cross inventory and configuration management boundaries and can not easily be translated into resource savings but will have a positive impact on the ship's ability to improve combat sustainability.

b. Configuration Management

Several aspects of configuration management reflected enhancements from the SMA reports. They are grouped together by the impact that they have on the COSAL.

Some of the ships had more than one type of improvement made to their COSAL. Eighteen of the 28 reports, or 62 percent, reflected configuration management improvements. The configuration management improvements are listed in Table 3.

TABLE 3

CONFIGURATION MANAGEMENT IMPROVEMENTS

EQUIPMENT COSAL SUPPORTED, BUT NO LONGER ON BOARD

Ships Total Erroneous Equipment Supported

EQUIPMENT POPULATION OVER COSAL SUPPORTED

Ships Total Number of Over Population Support

10 33

EQUIPMENT NOT COSAL SUPPORTED

2

Ships Total Number of Equipment Not Supported

10 35

EQUIPMENT POPULATION UNDER COSAL SUPPORTED

Ships Total Number of Under Population Support

2

3

EQUIPMENT SUPPORTED BY BASIC ALLOWANCE DOCUMENT (BALD) APL

Ships Total Number of Bald Equipment Support

APL MINOR SUPPORT DATA MISSING FROM THE COSAL

Ships Total Number of APLs Missing Minor

Support Data

9 12,916

COSAL MISSING PART CF/CR

Ships

1

1

3

Configuration management improvements are more readily identified from the SMA reports than seen by a ship's crew, since changes to the COSAL can take more than six months to reflect in allowance documents from Ships Part Control Center (SPCC). This delay may be the main reason why only six (13 percent) of the survey responses indicated configuration management savings while 18, or 62 percent of the SMA reports indicated those savings.

The major benefits realized by having the correct equipment population support on-board are: sufficient repair part allowances to support shipboard equipment, elimination of unnecessary parts, receipt of repair part shortages caused by allowance deficiencies, credit received by the type commander from the supply system when repair parts which are no longer needed are turned-in for redistribution, freeing up turned-in parts to fill shortages on other ships, and manpower savings realized by no longer having to manage parts not required on-board.

The ship and type commander benefit from updating the COSAL to reflect all major shipboard equipment by: receiving additional repair part support and at the same time improving combat sustainability.

The ship improves its supply support function when it updates the Allowance Parts List (APL) data in the COSAL because new changes to those APLs can then be more quickly forwarded to applicable work centers.

The ship and type commander benefit from having part CF and CR (RSS and MAMS sections) in the COSAL by ensuring correct RSS and MAMS support for applicable shipboard equipment. By having adequate RSS and MAMS support on-board, the ship can improve its combat sustainability through reducing maintenance time and shortening repair down time.

c. Automation Improvements

All FFG-7 and DD-963 class ships have the SNAP II computer system installed. The SMA was able to significantly increase the depth and range of the assessment by utilizing the status, exception and management reports from SNAP II. Specific improvements or corrections to SNAP utilization were made on 13 ships (46 percent) during the course of the assessments. These enhancements are intended to improve supply management efficiency and increase service to the crew. Examples of the types of improvements made during the SMA are: re-setting inventory level parameters, correcting allowance change request (CKs) and COSAL changes/ update processing procedures (resulting in the submission of over 5260 changes and 23 CKs), instructing supply support managers on report generation and usage, etc. These ships will notice increased supply support effectiveness, but a dollar value savings would be almost impossible to identify.

D. INTERVIEWS

Two interviews were conducted by telephone during April and May 1989. [Refs. 7,8] The interviewees were asked what costs and benefits had been realized by the type commander and other commands. Additionally they were asked what other changes could be made to the SMA to improve its effectiveness. Results of the interviews are summarized below.

1. Program Costs

Two types of costs are incurred by the SMA program that were not incurred by the SMI. First, there are increased Temporary Additional Duty (TAD) costs for the personnel that conduct the line portion of the SMA. Second, there were personnel losses experienced by subordinate commands and divisions within COMNAVSURFPAC associated with transfer of personnel to the SMA team to conduct the line portion of the assessment.

TAD costs for this competitive cycle have not been finalized since the cycle is not complete. However, the SMA team estimates that the total increase in travel expenses to support the four additional inspectors will be approximately \$2000 for the competitive cycle (January 1988-June 1989).

The second cost of the SMA, that of the personnel billets of four line inspectors, was borne by the transferring subordinate commands and other divisions within COMNAV-SURFPAC. The cost of losing these personnel cannot be

accurately measured by a dollar figure, but can be factored into the overall assessment of the SMA.

2. Program Benefits

The interviewees reported that several major benefits are derived from the transition to the SMA; line involvement in the supply management function on-board, improved configuration management and combat sustainability, a more accurate assessment of the supply management function, and significant resource savings. Examples of specific SURFPAC resource savings are the recovery of over \$1,330,000 from the ESP program, turn-in or transfer of more than \$580,000 in excess storeroom parts, and the recovery of more than \$285,000 in re-established requisitions (old requisitions with no active status). The excess storeroom parts and re-instituted requisition recoveries cannot be credited to the SMA, because it can not be determined that the SMI would not have discovered them.

Examples of some of the configuration management and combat sustainability improvements include: the correction of errors in RSS and MAMS allowance lists, resolution of COSAL deficiencies and excesses, and the involvement of line personnel which has highlighted supply management problems in the work spaces.

E. DATA SUMMARY

This section summarizes the data obtained from the three sources: survey, SMA reports and interviews.

The costs and benefits realized from the transition to the Supply Management Assessment (SMA) from the Supply Management Inspection (SMI) by the sample SURFPAC ships, the type commander and other impacted commands are summarized and analyzed in the following paragraphs.

1. Overall Costs of the SMA Program

The costs attributed to the SMA by the ships and from the interviews with the SMA team consisted of the following items.

- a. Temporary Additional Duty (TAD) Expenses

 Approximately \$2000 in additional TAD expenses

 will be incurred by the SMA team during each 18 month

 competitive cycle. This increased expense will be borne by
 the type commander.
 - b. Increased Manhour Requirements

An undetermined number of additional manhours are now required by 19 percent of the survey respondents. These additional requirements are evenly incurred by each line department.

c. Transfer of Four Personnel Billets to the SMA Team

Subordinate commands and other divisions within COMNAVSURFPAC staff transferred four billets to the COMNAV-SURFPAC SMA team. None of those commands/divisions have reported a negative impact on their ability to perform their primary mission nor have they requested return of the billets.

2. Overall Benefits of the SMA Program

The benefits attributed to the SMA by the ships in the survey responses, from the SMA reports, and from the interviews are discussed next.

a. OPTAR and Inventory Management Savings

Survey respondents identified \$734,000 in OPTAR savings, SMA reports reflected savings of over \$120,000, and a sum in excess of \$1,330,000 was identified in the interviews. A duplication of some \$62,926 was included in both the SMA reports and the interview with the SMA team.

The gross OPTAR savings to the Surface Force, U.S. Pacific Fleet exceeds \$2,121,000.

b. Manhour Savings

An undetermined amount of manhour savings were reported by 31 percent of the survey respondents. These manhour savings were generated by all departments.

c. Supply Support Improvements

Supply support improvements were reported by 88 percent of the ships responding to the survey. Some of the respondents indicated more than one supply support area of improvement. The supply support areas that benefitted from the transition to the SMA are:

Number of Ships Indicating Benefits	Percentage
13	81
7	44
6	38
4	25
2	13
	Indicating Benefits 13 7 6

The supply support areas that experienced improvement and the frequency that each area reflected that benefit are indicated below.

Supply Support Area of Improvement	Number of Benefit Responses	Percentage		
Inventory Management Training/Level of	23	51		
Knowledge	7	16		
Fiscal Management Configuration	6	13		
Management Crew Service or	6	13		
Support	3	7		

d. Configuration Management

configuration management improvements, as outlined in Table 3, were noted in the SMA reports on 62 percent of the ships. Twenty-five percent of the survey respondents also indicated an improvement in this area. These configuration improvements will increase the combat sustainability of these ships by providing the correct repair part allowance. Other improvements (e.g., correcting inventory discrepancies, providing part number cross reference lists, allowance lists, etc.) to the RSS and MAMS programs in the work spaces will also enhance combat

sustainability, reduce maintenance manhour requirements, and equipment down time.

e. Automation Improvements

Enhancements to the SNAP II system were made on 46 percent of the assessed ships, improving financial, configuration and inventory management.

Specifically, configuration management was improved by transmitting in excess of 5200 changes to ships COSALS and 23 CKs to lead shipyards. Additionally, the process resulted in re-setting inventory stocking levels to reflect correct quantities of repair parts to be carried and also contributed to the refinement of management report preparation and usage.

F. RESULTS OF THE DATA ANALYSIS

1. Financial Costs and Benefits

Commander, Naval Surface Force, U.S. Pacific Fleet incurred an estimated additional \$2000 TAD expense during the transition to the SMA (January 1988-May 1989), at the same time realizing over \$2,121,000 in OPTAR and inventory savings. The net possible gain from the transition to the SMA is in excess of \$2,119,000. The ESP, excess MAMS/RSS savings and obligation rate changes (\$1,421,000) and the (\$2000) TAD expense will be realized on a continuing basis.

2. Manhour Savings

Manhour savings occurred in 31 percent of the surveyed ships while only 19 percent of those ships

indicated increased manhour requirements. Approximately 12 percent more ships reflected manhour savings than requirement increases. These savings in manhours were spread evenly through all departments.

3. Supply Support Improvements

Supply support improvements were noted by 83 percent of the survey respondents and in 86 percent of the SMA reports. There were no indications of degradation to supply support on any of the survey responses or from the SMA reports.

Automation utilization enhancements were made to 46 percent of the sample ships, improving supply management effectiveness.

Configuration management improvements were made to over 62 percent of the sample ships, greatly enhancing COSAL accuracy and reducing maintenance and repair time.

III. CONCLUSION AND RECOMMENDATIONS

A. CONCLUSION

From January 1988-May 1989, Commander, Naval Surface
Force, U.S. Pacific Fleet realized approximately \$2,119,000
in savings, supply management manhour expenditure reductions
by some SURFPAC afloat units, and supply management and
combat sustainability improvements on more than 88% of
SURFPAC afloat units responding to the survey, due to the
transition to the Supply Management Assessment. These
resource savings and supply management enhancements have
significantly improved the readiness of the Surface Force,
U.S. Pacific FLeet.

B. RECOMMENDATIONS

The findings from this study indicate that significant resource savings and readiness improvements were realized from the Supply Management Assessment program. These savings and improvements to the Navy as a whole can be enhanced if other type commanders implement the SMA program. In light of the findings of this study, the following actions are recommended:

1. That COMNAVSURFPAC share information about the SMA program with all fleet and type commanders for their evaluation as a possible replacement of their current SMI programs.

- 2. That COMNAVSURFPAC continue to encourage participation of line personnel in the supply management process by further integrating that participation into the SMA.
- 3. That the 3M inspection be incorporated within the SMA. This proposal is presently being worked on by the SMA team, and could help correct many of the configuration, current ship maintenance plan (CSMP) and maintenance data system (MDS) problems that currently exist.
- 4. That COMNAVSURFPAC consider adopting the following recommendations for altering the Supply Management Assessment:
 - a. Regularly schedule assist visits 60 days prior to the end of overhauls. The advantage to scheduling assist visits prior to a ship's departure from overhaul is that it will be easier to identify overhaul related discrepancies while overhaul funding is still available to pay for corrective action.
 - b. Combine SMA/Navy Food Management Team assist visits prior to SMA inspection. The advantage to combining the two food service teams on assist visits would be: cross training of the team members, ensuring that fleet unit's are given the same advice from both teams of specialists, and allow the team members an opportunity to view the fleet from the other teams perspective.
 - c. Add and verify division officer, CPO and WC supervisor supply support training to SMA requirements. This training is needed to improve afloat configuration management.
 - d. Include LAMPS review in the SMA. This area is currently not inspected by any command and does have a significant impact on a ship's primary mission.
 - e. Conduct joint reviews by the SMA and Fleet Accounting and Disbursing Center, Pacific (FAADCPAC) on ships that have financial management problems. This would greatly reduce difference listing reconciliation problems, expeditiously recover OPTAR funds and reduce shipboard manhour requirements.

APPENDIX A

SURVEY MATERIALS SENT TO SELECTED SHIPS

The two page survey mailed out by Commander, Naval Surface Force, U.S. Pacific Fleet in support of this thesis was sent out in February 1989, under the following cover letter:

From: Commander, Naval Surface Force, U.S. Pacific Fleet

To: Distribution (All FFG-7, DD 963 class ships)

Subj: Supply Management Assessment (SMA) Review

Encl: (1) Supply Management Assessment Survey

- 1. The Force Supply Officer is conducting an evaluation of the SMA by attempting to quantify costs and resulting benefits realized since implementation.
- 2. As you are aware, the SMA program was designed to enhance overall afloat supply management both in terms of actual supply support and the resulting cost of program operations. In this period of deficit funding it is imperative that we take advantage of programs which improve our ability to fulfill mission responsibilities at lower costs. Likewise, it is essential that we identify new programs which increase costs with little or no return on investment.
- 3. Your assistance is necessary to adequately evaluate the success of the SMA program. Accordingly, please give careful consideration when completing encl (1). Request you return the survey to Commander, Naval Surface Force, U.S. Pacific Fleet, Naval Amphibious Base Coronado, San Diego, California 92155-5035 (Attn: Code 714) by March 22, 1989.
- 4. Thank you for taking time from your busy schedule to help us evaluate the effectiveness of our program.

K.W. LIBBY
By direction

SUPPLY MANAGEMENT ASSESSMENT SURVEY

1) Have you realized any <u>resource savings</u> and/or <u>increased costs</u> (based on such items as OPTAR obligation rates, personnel time commitments, usage/stocking levels, inventory control of ESP/SRI/OSI/MAMS/RSS, paperwork/personnel time savings from the elimination of OAT&D, etc.), which can be attributed directly to the Supply Management Assessment program.

<u>SAVINGS</u>	Yes	No	COSTS	Yes	No
				103	110

2) If you experienced either savings and/or costs, specify the type (e.g., dollars, time, inventory, etc.), approximate amounts of savings and/or costs and time frame (e.g., continuing, one time, occasional etc.) that you are able to identify.

SAVINGS COSTS
Type Amount Time frame Type Amount Time frame

3) In which <u>department or division</u> did these changes occur (e.g., engineering, combat systems, ships store, food service, etc.)?

SAVINGS

COSTS

4) Did you realize any significant <u>improvement or</u> <u>degradation to supply support</u> that resulted from the Supply Management Assessment? If so, in what areas (e.g., better overall management, improved stock control of RSS/ESP, etc.)?

Yes No DEGRADATION Yes No AREA:

5) What areas of the Supply Management Assessment itself do you feel could be improved and in what ways? What would the benefits relative to the costs be?

Example:

SMA Follow-up Automatically sked assist visits after SMA for those ships that need help.

All errors are known, correcting them is easier then. No known costs.

Your Suggestions:

APPENDIX B

ACRONYMS

APL Allowance Parts List

AUOL Aged Unfilled Order Listing

BALD APL Basic Allowance Document

COMNAVSURFPAC Commander, Naval Surface Force, U.S.

Pacific Fleet

CF Part CF to a COSAL, lists all allowed

MAMS

CKs Allowance Change Requests

CR Part CR to a COSAL, lists all allowed RSS

COSAL Coordinated Shipboard Allowance List

CSMP Current Ship Maintenance Plan

DLK Depot Level Repairable

ESP Excess Spare Parts

FAADC Fleet Accounting and Disbursing Center

LAMPS Light Airborne Multi-Purpose System

MAMS Maintenance Assistance Modules

MDS Maintenance Data System

MOV Material Obligation Validation

MS Mess Management Specialist

MTR Mandatory Turn-in Repairable

OAT&D Organization, Administration and Training

OPTAR Operating Target

OSI Operating Space Items

RSS Ready Service Spares

SERVMART Service Market

SFOEDL Summary Filled Order Expenditure Listing

SMA Supply Management Assessment

SMI Supply Management Inspection

SNAP Shipboard Non-Tactical Automated Data

Processing

SPCC Ships Part Control Center

SRI Storeroom Items

SURFPAC Surface Force, U.S. Pacific Fleet

TAD Temporary Additional Duty

WC Work Center

3M Material Maintenance Management

LIST OF REFERENCES

- Commander, Naval Supply Systems Command Publication P-485.
- 2. Chief of Naval Operations Instruction 5040.7.
- 3. Commander, Naval Surface Forces, U.S. Pacific Feet letter 5040 Ser 7/3152 of 12 March 1987.
- 4. Memorandum for Commander, Naval Surface Forces, U.S. Pacific Fleet from Commander, Cruiser-Destroyer Group ONE of 5 June 1987.
- 5. Memorandum by Assistant Chief of Staff for Supply, Financial Management and Automated Data Processing of 2 July 1987.
- 6. Commander, Naval Surface Force, U.S. Pacific Fleet Instruction 5040.1.
- 7. Interview with LCDR Davis Hewitt, Head, Supply Management Assessment Team COMNAVSURFPAC, Code 714 Naval Amphibious Base, Coronado Ca 92155-5035 24 April 1989.
- 8. Interview with LT Steve Romano, Senior Inspector Supply Management Assessment Team COMNAVSURFPAC, Code 714 Naval Amphibious Base, Coronado Ca 92155-5035 28 April and 5 May 1989.